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(54) Title: PHARMACEUTICAL COMPOSITIONS AND METHODS FOR METABOLIC MODULATION

(57) Abstract: Pharmaceutical compositions include compounds with cytokinin activity to modulate glucose and/or lipid metab-  
olism in a mammal. Especially preferred compounds include those comprising a purine scaffold, and it is further preferred that  
contemplated compositions are employed to prevent and/or treat various diseases, including pre-diabetes, insulin resistance, type-2  
diabetes, Syndrome X, and dyslipidemia. In still further preferred aspects, compounds with cytokinin activity are used to activate  
AMPK and/or Akt. Consequently, various diseases associated with dysregulation of AMPK and/or Akt may be treated using the  
compounds of the present inventive subject matter.

WO 2005/020892 A3